

22

NORTH



BORNEO

# *Annual Report*

OF

## The Medical Department

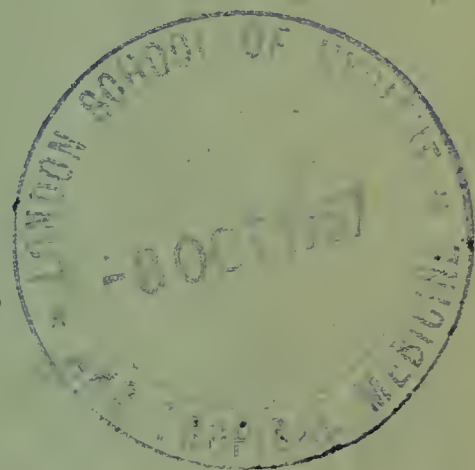
FOR THE YEAR

# 1956



*By*

L. J. CLAPHAM, M.D., D.P.H., D.T.M. & H.  
*Director of Medical Services*







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## PUBLIC HEALTH

### *General Health:*

SO FAR as major epidemic disease is concerned, the Colony remained remarkably healthy during 1956. No case of any of the major epidemic diseases was reported. The main diseases, however, of public health importance continue to be malaria, tuberculosis and intestinal infestations. There is now every reason to hope that malaria can be satisfactorily controlled if not, indeed, eradicated within the foreseeable future. Tuberculosis continues to present a major health problem, and special consideration is being given to it. The number of patients presenting themselves for treatment for the first time is still increasing. Although the results of treatment are very largely satisfactory, attention is increasingly being directed to the question of prevention.

2. The statistics available show that far more people still suffer from malaria than tuberculosis. Only those who are sufficiently ill to have reported to a Government hospital or dispensary or those who live near enough to visit such an institution or who come within the scope of travelling dispensaries are recorded. Thus there were 42,087 cases of malaria in 1956 compared with 41,425 in 1955, and 2,317 new cases of tuberculosis reported in 1956 compared with 1,811 in 1955.

3. In those towns where the provision of adequate water supplies and other measures of environmental sanitation are still lacking, there is a notable incidence of intestinal disease as compared with other more fortunate towns. As in previous years, respiratory diseases are remarked on from the rural districts. These often begin with common colds or other fevers and lead on to pneumonia.

4. It is also noticeable that in certain sea-port towns there have been reported cases of beri-beri. Many are "imported" as they occur in the crews of small trading vessels coming from adjacent territories. Nevertheless, there were a total number of cases of beri-beri numbering some 350 recorded during the year. A proportion of these were recorded by the travelling Railway Dispensary, and it was remarked that cases were occurring where small-holders had installed their own rice mills and were polishing their rice too highly. There is no evidence of gross malnutrition in the population of the Colony and, indeed, most Medical Officers report a general improvement in the nutritional state of the population. Certain remote districts in the interior of the East Coast Residency suffer from chronic malnutrition and many diseases ascribable to dietary deficiencies. To improve the health of this small population, increased treatment services are proposed combined with preventive measures such as the provision of iodized salt. Some of the people concerned are so poor that they do not even purchase salt as a normal item of their diet.

5. The Inter-Territorial Ophthalmologist visited North Borneo twice during the year in the months of April and October. More detailed information is given below.

6. Figures showing the number of births and deaths registered in the last five years are:—

	1952	1953	1954	1955	1956
Births Registered ... ..	11,457	11,155	12,115	11,780	12,455
Deaths Registered ... ..	4,395	4,405	3,918	4,088	3,910
Excess of Births over Deaths	7,062	6,750	8,197	7,692	8,545

	<i>Indi- genous</i>	<i>Chi- nese</i>	<i>Euro- pean</i>	<i>Others</i>	<i>Total</i>
Births Registered in 1956 ...	7,381	4,184	42	848	12,455
Deaths Registered in 1956 ...	3,035	634	6	235	3,910

7. The total estimated population at the end of 1956 was 385,869. This total is made up as follows:—

Indigenous ... ..	262,523
Chinese ... ..	92,647
European (including Eurasian) ... ..	1,725
Others ... ..	28,974
<b>TOTAL ...</b>	<b>385,869</b>

8. The decline of the Murut population which has been remarked in these reports for the past few years was still under investigation during 1956. An interim report was received from the social anthropologist, Professor J. Landgraf, in the latter part of the year and his recommendations are under examination. An enquiry conducted amongst the Murut population temporarily living on rubber estates in the Interior Residency indicated that amongst this section of Muruts, at least, midwifery practices were very bad indeed.

9. No accurate figures of maternal and infant mortality are available, but there is no doubt that in centres where Maternal and Child Welfare Clinics are well established, these are readily used by mothers and children and mortality and morbidity are much reduced.

#### *Malaria Control:*

10. A joint pilot scheme for the control of malaria sponsored by the Government, the World Health Organisation and United Nations Children's Fund began in July, 1955. The World Health Organisation is providing the senior technical staff, UNICEF provides a great deal of equipment such as vehicles, insecticides, sprayers, laboratory equipment and other supplies, and the Government provides a Malaria



Control Officer, the junior technical staff and labour force, and the cost of running the scheme within the Colony. The pilot project was established in mid-1955 with headquarters at Keningau in the Interior Residency. The Tambunan district was selected to be sprayed with DDT, the Keningau area left unsprayed as a control and the Tenom area sprayed with Dieldrin. Insufficient time has elapsed for a full assessment to be made of the likely success of these operations, but preliminary results indicate that malaria transmission can be slowed down very greatly, if indeed not stopped, by the use of residual insecticides. There is some evidence to show that Dieldrin may be, so far as North Borneo is concerned, superior to DDT. In both the sprayed areas less than ten new cases of malaria amongst infants were found during the first six months after spraying. Cases of "fever" continue to occur, and no doubt many of them are relapses of malaria. A similar number of "fever" cases also occur in the sprayed areas, but many of them must be due to diseases other than malaria.

#### *Tuberculosis:*

11. Pulmonary tuberculosis continues to cause a great deal of ill-health requiring prolonged treatment amongst all sections of the community. In the absence of accurate statistical material it is not possible to draw the conclusion that the disease is on the increase, but it may well be so. There is no doubt that improved methods of treatment and propaganda have brought about a very substantial increase in the numbers of patients presenting themselves for treatment. It is still difficult to persuade many patients to persevere with the rather lengthy course of treatment necessary. Figures relating to out-patients and in-patients' attendance and deaths in hospitals annually for the last five years are given below.

(a) Annual admissions to hospital for treatment of tuberculosis:

1952	1953	1954	1955	1956
282	400	554	1,055	1,227

(b) Annual number of new out-patients attending for treatment:

1952	1953	1954	1955	1956
51	200	201	756	1,090

(c) Number of deaths in hospital from tuberculosis annually:

1952	1953	1954	1955	1956
52	36	22	53	46

An approach has been made by the Government to the Colombo Plan Authorities in Australia for a visit from a Tuberculosis expert to assist the Medical Department in the planning of their campaign

against tuberculosis. The expert is expected to visit North Borneo during the middle of 1957, and it is hoped that this may lead to assistance from Colombo Plan resources in work against tuberculosis.

12. Some early cases of the disease are discovered as a result of the routine X-ray examinations undertaken on intending candidates for the Government service and other employment, and as might be expected the response to treatment in this group is particularly good. Similarly contact-tracing results in new cases being found and treated.

13. The North Borneo Anti-Tuberculosis Association (NOBATA) which was formed in the year 1953 has continued during 1956 to be very active in propaganda concerning the disease and in the provision of welfare and relief work amongst sufferers from tuberculosis and their dependants. Much of the increased hospital attendance can be attributed to the efforts of this Association both in tracing contacts and encouraging out-patient attendance as well as to its welfare work amongst both in-patients and out-patients.

14. The expenditure by the Department on drugs for the treatment of tuberculosis and for X-ray films involved in the diagnosis and checking of tuberculosis patients amounts to almost one-third of the total sum allocated annually to medical stores. The X-ray equipment now installed in all the major hospitals continues to be used for a great deal of the time in the investigation of tuberculosis. Special tuberculosis wards are now being erected at Jesselton and there are proposals for similar wards in many other stations. The wards at Tawau were completed during 1956 and brought into use. In spite of an increase in the number of beds available for the treatment of tuberculosis—and in some stations these have been almost doubled—it is impossible to provide hospital beds for all those who suffer from the disease. In consequence out-patient treatment has been instituted wherever possible, this being in accord with modern practice all over the world.

#### *Intestinal Disorders:*

15. As in all tropical countries where general standards of hygiene and sanitation are low, bowel infections form a high proportion of the diseases encountered. However, improved sanitation both as regards disposal of night soil and refuse, and improved water supplies, will substantially reduce the number of bowel diseases in the urban areas. The rural community still rely on unprotected wells and polluted rivers and streams as sources of water, whilst the disposal of excreta and rubbish in most rural areas is unsatisfactory. A large proportion of the general population harbours more than one kind of intestinal parasite, although serious epidemics of bowel infections are remarkably rare.



16. Most stations report that amoebiasis is common and frequently discovered on routine examination of stool specimens. Medical Officers report that, in view of the low standards of environmental hygiene often prevailing, it is perhaps surprising that there is not more. All Medical Officers are unanimous in reporting a heavy worm infestation of almost every person presenting himself for treatment at hospitals and dispensaries. The commonest types are those caused by *Ascaris lumbricoides* and *Ankylostomes*: and in many cases a double infection exists.

## GENERAL SANITATION AND PREVENTIVE MEASURES

17. Health Inspectors are now posted at all the major towns in the Colony. Their services are appreciated, but the work of a health inspector is still insufficiently known to many members of the public and, in consequence, the health inspectors have certain difficulties to surmount. Two health inspectors who spent nine months of the year in Singapore undertook a course of training leading to the examination for the Certificate of the Royal Society of Health. Two senior officers of the Department took courses in London and Liverpool leading to the Diploma of Public Health. Both were successful in their examinations.

The planning of environmental sanitation for the major towns undertaken by the World Health Organisation in co-operation with the Public Works Department and Medical Department, was completed by the end of the year and schemes to implement the plans began in the major towns.

18. Routine Port Health work was carried on throughout the year with no special matters of interest to report. The Colony is well protected with regard to shipping arriving from Singapore and Hong Kong where it has already been thoroughly screened. The major potential danger lies in small coastal vessels and fishing boats arriving from neighbouring territories at isolated spots along the coast.

### *Nutrition:*

19. From all centres reports suggest that the state of nutrition of the public continues to improve, and this is particularly noticeable in those places where there is a flourishing import and export trade. As noted above, a few cases of beri-beri occur but many are imported from elsewhere.

20. Almost all stations report that iron-deficiency anaemia is still very common and particularly noticeable in pregnant women. With a view to improving nutrition and supplementing the Government drugs designed to improve the health of pregnant and nursing mothers

and young children, UNICEF has generously continued to support with drug and diet supplements the Maternal and Child Welfare Clinics and Health Centres throughout the Colony. Attendances at these clinics continue to increase and may be expected to increase still further with the posting of Health Visitors to the two major centres in Jesselton and Sandakan. There is still need, however, for considerable work in the field of education regarding dietaries and nutrition, and many of the population still fail to make the best use of those sources of fresh food and vegetables, including fruit, which are available to them.

#### *Eye Diseases:*

21. The Inter-Territorial Ophthalmologist for the three Borneo Territories of North Borneo, Brunei and Sarawak visited North Borneo for just over two months on each occasion in April and October. It had always been considered that there was a great deal of preventable eye disease in the Colony, and the report submitted by the ophthalmologist confirms this view.

22. On his visits in 1956 the ophthalmologist saw almost 2,000 patients. Fifty-two per cent were Chinese and thirty-three per cent Natives of the Colony. He was able to perform 365 operations, 104 of these being for the relief of cataract. The ophthalmologist's services were well spread over the Colony as he visited Jesselton, Tawau, Sandakan, Papar, Kudat, Beaufort, Labuan and Keningau, performing operations in all these places. Glasses were prescribed for more than 400 patients. Arrangements are made for the provision of free glasses to poor persons who are unable to pay for them.

The ophthalmologist reported having seen sixty-two incurably blind persons and remarks that some twenty per cent of this is related, in his opinion, to measles in infancy and childhood.

Out of 1,400 children examined at eleven different schools, the incidence of trachoma was found to be 7.3%. The incidence among Native children is almost double that of Chinese school-children. The ophthalmologist also took a part in training junior staff and gave lectures to the nursing staff in Jesselton and all other stations wherever possible. Instruction was particularly given in the treatment of trachoma and in minor procedures related to eye nursing and ophthalmic surgery. He remarks that the standard of nursing of eye patients has improved in a gratifying way since his first visit.

#### *Leprosy:*

23. The rehabilitation of the Leper Settlement on Berhala Island in Sandakan harbour has been further deferred as it has been found



possible to maintain the existing reconditioned buildings. The number of patients under treatment at the Settlement averages forty-five and the number of admissions during the year was six and discharges eight. Although it is appreciated that there are almost certainly other lepers as yet undetected, it is not thought that leprosy presents a serious public health problem in the Colony. Steps have been taken to enable the Medical Officers to treat early and non-infectious cases of leprosy at their own stations rather than removing the patient to seclusion in the Leper Settlement. It is hoped that this will encourage sufferers to report early for treatment.

The North Borneo Leper Settlement is now so small that it has become almost an uneconomic unit to operate in an efficient way and consideration is being given to the possibility of obtaining treatment outside the Colony for leper patients. It is thought that a larger settlement in a nearby Colony would offer better facilities for rehabilitation as well as treatment and at the same time permit the Medical Department and the very active Leper Settlement Welfare Relief Committee to concentrate on the replacement of cured patients in ordinary life in the Colony, and on the care of those permanently crippled.

## **GOVERNMENT HOSPITAL AND DISPENSARIES**

24. There are two major hospitals in the Colony situated at Jesselton and Sandakan. Their combined number of beds amounts to 320. At these General Hospitals, provision is made for full medical and surgical care of patients. Very adequate operating theatre facilities, X-ray departments, and laboratories are available; and special wards are set aside for maternity cases, for children, and for the treatment of acutely ill tuberculosis patients and other infectious disease.

25. There are, in addition, five cottage hospitals totalling 301 beds, at each of which a Medical Officer is stationed. Each of these smaller hospitals acts as a centre for the surrounding districts which are regularly toured by the Medical Officer-in-Charge, or by his subordinate staff.

26. There are ten Outstation Dispensaries with restbeds to the number of 156 beds in all, each under the charge of a senior hospital assistant and regularly visited by a Medical Officer. In addition, there are eighteen smaller dispensaries at which out-patients treatment is available but at which no beds for in-patients are provided.

27. During the year 14,452 in-patients were treated as compared with 12,304 in 1955, and 342,134 out-patients were treated as compared with 308,332 in 1955. 33,767 patients were treated by mobile clinics and travelling dispensaries.

28. The two major health centres in Jesselton and Sandakan continued to work on an expanding scale throughout the year. These centres are designed to provide ante- and post-natal care and infant welfare clinics in the two large population centres.

29. Despite the fact that in certain interior districts the population increase appears to be comparatively small or even so low that certain communities are in danger of actually disappearing, it is evident that in the larger population centres, and particularly amongst the Chinese, there is a real demand for assistance in family limitation.

Both centres receive support and assistance from the local branches of the British Red Cross Society and the St. John Ambulance Association.

#### *Buildings:*

30. The work begun on the construction of the new Jesselton Hospital in 1955 continued throughout 1956, and by the end of the year the building was well advanced and likely to be ready for occupation by the middle of 1957. Some staff quarters were completed.

31. The new hospital and staff quarters at Keningau were under construction throughout the year and are likely to be completed by the middle of 1957.

32. The construction of a new Mental Hospital is still unfortunately delayed as no suitable site could be found in Sandakan. In view of this and the fact that mental patients are in the proportion of two to one from the West Coast as compared with the East Coast, it has been decided that the new Mental Hospital will be constructed in the neighbourhood of Jesselton. A possible site has been found and is now under examination.

33. The trained Hospital Assistant who was granted a six months' special course of training at the Woodbridge Mental Hospital in Singapore returned, and his services have been most useful at the Mental Hospital, Sandakan.

34. The presence of a mental trained male nurse throughout the year has made very great improvements possible in conditions at the Mental Hospital and treatment has been conducted on an increased scale. The change in the outlook of the patients is most noticeable and it is rare under present conditions to find more than a very few patients confined in any way except to the hospital as a whole.

#### *Travelling Dispensaries:*

35. In addition to the existing service of travelling dispensaries on roads, a travelling dispensary on the railway system was put into



operation in September, 1955. This dispensary is built on a standard railway coach and consists of a dispensary, waiting space for patients, and sleeping quarters for the hospital assistant in charge and his attendant. This dispensary operates on the line between Jesselton and Beaufort on the West Coast on a weekly schedule. Since its inception, it has proved extremely successful and popular and now treats on the average some 2,340 patients a month.

#### *Ambulances:*

36. The ambulances available to the Department are subjected to very heavy use and their adequate maintenance and eventual replacement always involves considerable expense. Two new ambulances were expected early in 1957.

#### *Estate Hospitals and Dispensaries:*

37. The Labour Ordinance provides for employers of labour being required to furnish hospitals and medical supervision, care, and treatment for their workers. All the larger estates and industrial concerns have dispensaries or small hospitals, and during the year there were forty-nine places of employment at which such medical facilities were provided. A scheme has been formulated to enable employers for estates and other commercial enterprises (who are required to employ them under the terms of the Labour Ordinance) to be trained in the Government training school. So far only one employer has taken advantage of this scheme in which the training is offered free of charge.

### **STAFF**

38. The Department is administered by a Director and a Deputy Director of Medical Services, with a Colony Matron and a Medical Accountant-Storekeeper at Headquarters in Jesselton. During the year the establishment of twelve Medical Officers in addition to the Colony Surgeon and the Dental Surgeon was brought up to strength.

#### *Nursing Staff and Training:*

39. The nursing staff consists of the following:—

##### Senior and Junior Staff Nurses/

Hospital Assistants	...	...	...	29
Hospital Assistants	...	...	...	88
Trained Nurses	...	...	...	18
Probationary Hospital Assistants	...	...	...	43
Probationary Nurses	...	...	...	32
Assistant Nurses	...	...	...	10

One trained Hospital Assistant was granted a scholarship by the National Association for the Prevention of Tuberculosis and will be leaving for England in early 1957. Very generous assistance has been received from the Government of Australia under the Colombo Plan and Fellowships in Medical Storekeeping and Radiology for a period of six months were granted to three trained Hospital Assistants during the year.

40. An experiment began in the middle of the year, 1955 to bring in practising midwives for a brief period of training. These ladies are unregistered, untrained and mostly illiterate, but the fact remains that they do, in fact, conduct a great deal of midwifery in the country districts. The ladies selected for training must be recommended by Headmen in consultation with the District Officer or District Team. They spend some three weeks in a recognised centre and are later provided with a very simple bag which is supplied by UNICEF. So far fifty such practising midwives have been brought into centres for training. The advantages of this scheme are that the Medical Department becomes aware of who these midwives are and the district in which they are practising. It is thus possible to bring them in once again at six-monthly intervals for further teaching. It also makes it possible for the Health Visitors to check on the practice of these midwives and their equipment. The scheme so far appears to be working satisfactorily.

41. In addition to the work of the Sister Tutor teaching classes are held in the major hospitals. They are conducted by the Medical Officers, Matron and Nursing Sisters.

*Return from Operating Theatre and Dental Department:*

42. These will be found in Appendices A and B respectively.

43. Visits during the year were received from officials of the World Health Organization, whose Regional Office for the Western Pacific is situated in Manila, and from the Resident Representative of the United Nations Children's Fund, the headquarters of which are in Bangkok. Professor I. G. W. Hill, Professor of Medicine of St. Andrews University visited the Colony in July, his tour being arranged by the Secretary of State for the Colonies. Other visitors included Sir Alexander Macfarquar of the Technical Assistance Board of the United Nations; and representatives from various departments of the University of Malaya. The continuing interest taken in the Colony's medical problems by these visitors is greatly appreciated.



## EXPENDITURE

44. The estimated expenditure on medical services from Colony funds in 1956 including personal emoluments amounted to \$2,520,631. This figure refers to Medical Department expenditure only, and does not include sums spent in the towns on municipal conservancy measures such as scavenging, removal of nightsoil and inspections by Town Board officials within the urban areas. Neither does it include capital expenditure on new buildings nor the generous aid which the Colony continued to receive during the year under Colonial Development and Welfare Schemes, and from the United Nations Children's Fund, the World Health Organisation and Colombo Plan Technical Assistance.

A summary is given below:—

(a) Personal emoluments	...	...	\$1,322,653
(b) Recurrent costs	...	...	1,173,874
(c) Special expenditure	...	...	24,104
TOTAL ...			<u>\$2,520,631</u>

## APPENDIX A

MAJOR SURGICAL OPERATIONS PERFORMED DURING THE YEAR, 1956 BY THE  
COLONY SURGEON AT JESSELTON HOSPITAL

<i>Major operations</i>	...	...	...	...	229
Abdominal	...	...	...	80	
Orthopaedic	...	...	...	38	
Ano-Rectal	...	...	...	21	
Hernias	...	...	...	23	
Tonsils	...	...	...	22	
Cranial and Spinal Cord			...	2	
Plastic	...	...	...	18	
Neck	...	...	...	16	
Genito-urinary		...	...	6	
Breast	...	...	...	3	
<i>Minor operations, including fractures</i>			...	...	1,104
					<hr/>
			TOTAL	...	1,333
					<hr/>

## APPENDIX B

## ANNUAL REPORT OF THE DENTAL DEPARTMENT FOR 1956

The most significant advance during 1956 has been a development one, namely, the long awaited commencement of the School Dental Service. Credit for this is undoubtedly due to two organizations; firstly, the New Zealand Government for supplying the personnel and training facilities and secondly, UNICEF for providing the bulk of the capital equipment required.

There can be little doubt that such an early start would have been impossible had the initiation of the service depended upon the resources of this Colony.

Two Dental School Nurses were provided by the donor country and the two Clinics in Jesselton and Sandakan respectively, are now firmly established. From the figures provided by the Dental Nurses and shown here in Appendix B, it can be seen that the results are most gratifying; bearing in mind that they cover a period of only five months and that suspicion and apathy of parents had necessarily to be overcome.

Owing to the vast numbers of school children potentially available for treatment, some selectivity had perforce to be used. It was decided, in co-operation with the Education Department, to restrict treatment to children of the age of six who had reached an educational standard of Primary 1. This provided, initially, a field of 250 children in each centre with which to begin the service.

The scope of treatment given by the Dental Nurses includes inspection, cleaning, conservation, extraction, and instruction in oral hygiene and diet.

## GENERAL DENTAL SERVICE

In this field, there was again a further increase in figures for the past year. All sections of the community used the service to such an extent that appointments were being made three months' in advance, for conservative treatment. One member of the Staff has been almost completely occupied extracting teeth only. All outstanding equipment ordered during 1955 for installation in the new Hospital has arrived and an Indent was placed for a few miscellaneous items during the year. The situation regarding capital equipment continues to be satisfactory, although stocks of expendable material were expectedly depleted immediately following arrival of the school dental nurses.

## STAFF

The establishment remains as follows:—

Dental Officer	...	...	...	...	1
Dental Assistant	...	...	...	...	1
Dental Mechanic	...	...	...	...	1
Dental Nurse/Receptionist	...	...	...	...	1
Attendant	...	...	...	...	1

## OUTSTATIONS

Labuan, Sandakan and Tawau were each visited twice, and Kudat once in the course of the year, and the Department was overwhelmed on every occasion by requests for treatment.



## APPENDIX B—(cont.)

*Appendix A:**General Dental Service:**Record of Treatment Provided:*

Attendances including inspections	...	...	4,025
Number of teeth filled	...	...	1,397
Number of temporary teeth extracted	...	...	1,872
Number of permanent teeth extracted	...	...	1,864
Other operations, including temporary fillings, orthodontic appliances, splints and surgical cases	...	...	969
Number of general anaesthetics administered	...	...	255
Number of X-rays taken	...	...	78
Number of full dentures fitted	...	...	34
Repairs to dentures	...	...	23
Number of partial dentures fitted	...	...	47
Gold inlays	...	...	28

*Appendix B:**School Dental Service:**Jesselton:*

Fillings	...	...	...	1,416
Number of extractions	...	...	...	599
Number of cleanings	...	...	...	239
Initial examinations	...	...	...	189
Completions	...	...	...	106
Attendances	...	...	...	1,171

*School Dental Service:**Sandakan:*

Fillings	...	...	...	1,348
Number of extractions	...	...	...	955
Number of cleanings	...	...	...	135
Initial examinations	...	...	...	188
Completions	...	...	...	103
Attendances	...	...	...	860



## APPENDIX C

A table showing the medical and health staff of the Colony, including Mission doctors and private medical practitioners is appended:—

				<i>Government</i>	<i>Missions</i>	<i>Private</i>
Registered Physicians ...	...	...	...	16	1	29
Nursing Sisters ...	...	...	...	6	3	1
Staff Nurses ...	...	...	...	15	—	—
Trained Nurses ...	...	...	...	18	—	1
Probationer Nurses ...	...	...	...	32	—	—
Senior and Junior Hospital Assistants ...			...	14	—	—
Hospital Assistants ...	...	...	...	88	—	52
Probationer Hospital Assistants ...			...	43	—	—
Certified Midwives ...	...	...	...	37	3	49
Health Inspectors Grade I ...	...	...	...	1	—	—
Trained Health Inspectors ...	...	...	...	14	—	—
Probationer Health Inspectors ...	...	...	...	—	—	—
Kampong Midwives ...	...	...	...	—	—	50
Assistant Nurses ...	...	...	...	10	—	—
TOTAL ...				284	7	182



## STAFF

## APPENDIX D—(cont.)

	1952			1953			1954			1955			1956		
	Establishment	Actual	Vacancies	Establishment	Actual	Vacancies	Establishment	Actual	Vacancies	Establishment	Actual	Vacancies	Establishment	Actual	Vacancies
<b>HEALTH STAFF:</b>															
Health Inspector—															
Special Grade ...	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2
Health Inspector ...	6	1	5	12	11	1	12	11	1	12	11	1	1	1	—
Vaccinators ...	1	1	—	1	1	—	1	1	—	1	1	—	—	—	—
Rat Catcher ...	3	2	1	3	3	—	3	3	—	3	3	—	3	3	—
Village Health Inspectors ...	15	14	1	10	10	—	10	10	—	10	9	1	10	9	1
Anti-Mosquito Assistants ...	3	3	—	3	3	—	3	3	—	3	3	—	3	3	—
<b>MATERNITY &amp; CHILD WELFARE:</b>															
Staff Village Midwives ...	2	1	1	2	1	1	2	1	1	2	1	1	2	2	—
Village Midwives ...	29	20	9	29	16	13	29	16	13	29	18	11	29	19	10
<b>MISCELLANEOUS JUNIOR STAFF:</b>															
Laboratory Assistant ...	—	—	—	1	—	1	1	—	1	1	—	1	11	10	1
Dental Mechanic ...	—	—	—	1	1	—	1	1	—	1	1	—	1	1	—
Attendants and Servants ...	169	162	7	169	169	—	176	176	—	181	181	—	186	186	—
Mandors ...	10	8	2	7	7	—	7	7	—	7	7	—	7	6	1
Messengers ...	6	6	—	6	6	—	6	6	—	6	6	—	6	6	—
Watchmen ...	7	6	1	7	6	1	7	7	—	7	7	—	7	5	2
Cooks at Hostels ...	3	3	1	3	3	1	3	3	1	3	3	—	3	3	—
Amahs at Hostels ...	3	3	—	3	3	—	3	3	—	3	3	—	3	3	—

# APPENDIX E

INSTITUTIONS (GOVERNMENT)					Number of Institutions	Number of beds
1. Hospitals:						
(a) General hospitals (institutions equipped to deal adequately with all general medical and surgical cases) ...						
	...	...	...	...	2	320
(b) Cottage hospitals or infirmaries (smaller institutions equipped to handle only lighter cases, more severe cases being referred to General Hospital) ...						
	...	...	...	...	5	301
2. Dispensaries (institutions for treatment mainly of out-patients):						
(a) Exclusively for out-patients ...						
	...	...	...	...	18	—
(b) Having beds for lighter cases to be referred to General Hospital ...						
	...	...	...	...	12	177
3. Specialised Units:						
(a) Maternity and Child Welfare Centres ...						
	...	...	...	...	—	2
(b) Tuberculosis ...						
	...	...	...	...	2	—
(c) Venereal disease ...						
	...	...	...	...	—	—
(d) Leprosaria ...						
	...	...	...	...	—	1
(e) Mental Institutions ...						
	...	...	...	...	—	1
(f) Others ...						
	...	...	...	...	—	—
					In General Hospital	In Dispensary
					As Separate Unit	
					Number of Units	
					Total Staff	
4. Mobile Units ...					4	8



## APPENDIX F

ANNUAL RETURN OF MORBIDITY AND MORTALITY  
FOR THE YEAR, 1956

## 1. Racial Classification:

			OUT-PATIENTS		IN-PATIENTS
			<i>New Cases</i>	<i>Repeat Cases</i>	<i>New Cases admitted during year</i>
Natives,	1956 ...	...	139,908	66,434	7,461
	1955 ...	...	137,687	59,417	6,555
	1954 ...	...	126,657	54,883	5,583
	1953 ...	...	120,964	57,252	5,533
Chinese,	1956 ...	...	54,767	57,562	5,156
	1955 ...	...	50,180	44,274	4,578
	1954 ...	...	42,477	38,316	4,635
	1953 ...	...	41,547	33,183	4,096
Others,	1956 ...	...	13,181	10,282	1,835
	1955 ...	...	8,320	8,454	1,171
	1954 ...	...	8,822	9,657	1,842
	1953 ...	...	8,684	9,985	1,303
TOTAL,	1956 ...	...	207,856	134,278	14,452
	1955 ...	...	196,187	112,145	12,304
	1954 ...	...	177,956	102,856	12,060
	1953 ...	...	171,185	100,520	10,933

## 2. Patients seen at Ante-natal Clinics and not recorded in above or detailed classification of disease:

(1) New Cases	...	...	...	...	2,887
(2) Repeat Cases	...	...	...	...	19,757
(3) Contact Examined	...	...	...	...	176

## 3. Travelling Clinics:

(1) New Cases Seen	...	...	...	...	32,546
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## 4. Operations:

(1) Major	...	...	...	...	806
(2) Minor	...	...	...	...	3,715

5. Vaccinations	...	...	...	...	14,252
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RETURN OF MORBIDITY AND MORTALITY FOR THE YEAR, 1956

Intermediate List Numbers	Detailed List Numbers	CAUSE GROUPS	Outpatient 1st Attendances	Inpatient Admitted	Died in Hospital
A 1	001—008	Tuberculosis of respiratory system	246	982	33
A 2	010	Tuberculosis of meninges and central nervous system	—	6	5
A 3	011	Tuberculosis of intestines, peritoneum and mesenteric glands	4	12	1
A 4	012, 013	Tuberculosis of bones and joints	6	23	—
A 5	014—019	Tuberculosis, all other forms	834	204	7
A 6	020	Congenital syphilis	3	1	—
A 7	021	Early syphilis (primary and secondary)	1	4	—
A 8	024	Tabes dorsalis	—	—	—
A 9	025	General paralysis of insane	—	—	—
A 10	022, 023 }	All other syphilis	7	2	—
A 11	026—029 }	Gonococcal infections:	1	1	—
	030—035	(1) Acute	49	18	—
		(2) Other	8	6	—
A 12	040	Typhoid fever	—	2	—
A 13	041, 042	Paratyphoid fever and other salmonella infections	—	—	—
A 14	043	Cholera	—	—	—
A 15	044	Brucellosis (undulant fever)	—	—	—
A 16	045	Bacillary dysentery	172	26	1
(a)	046	Amoebiasis	202	180	4
(b)		Other unspecified forms of dysentery	2,976	91	2
(c)	047, 048	Scarlet fever	—	—	—
A 17	050	Streptococcal sore throat	96	2	1
A 18	051	Erysipelas	2	1	—
A 19	052	Septicæmia and Pyæmia	—	2	2
A 20	053	Diphtheria	1	23	11
A 21	055	Whooping Cough	642	21	1
A 22	056	Meningococcal infections	1	4	1
A 23	057	Plague	—	—	—
A 24	058	Leprosy	2	16	—
A 25	060	Tetanus	2	18	10
A 26	061				

A 27	062	Anthrax	...	...	...	—	—	—
A 28	080	Acute poliomyelitis	...	...	...	—	—	—
A 29	082	Acute infectious encephalitis	...	...	...	—	1	—
A 30	081, 083	Late effects of acute poliomyelitis and acute infectious encephalitis	...	...	...	—	—	—
A 31	084	Small-pox	...	...	...	—	—	—
A 32	085	Measles	...	...	...	661	123	4
A 33	091	Yellow fever	...	...	...	—	—	—
A 34	092	Infectious hepatitis	...	...	...	17	45	—
A 35	094	Rabies	...	...	...	—	—	—
A 36	100	Louse-borne epidemic typhus	...	...	...	—	—	—
(a)	101	Flea-borne epidemic typhus (murine)	...	...	...	—	—	—
(b)	104	Tick-borne epidemic typhus	...	...	...	—	—	—
(c)	105	Mite-borne typhus	...	...	...	—	—	—
(d)	102—103 } 106—108 }	Other and unspecified typhus	...	...	...	39	1	—
(e)	110	Vivax Malaria (benign tertian)	...	...	...	94	98	—
A 37	111	Malariae Malaria (quartan)	...	...	...	26	4	—
(a)	112	Falciparum malaria (malignant tertian)	...	...	...	785	294	17
(b)	115	Blackwater fever	...	...	...	2	1	—
(c)	113, 114 } 116, 117 }	Other and unspecified forms of malaria	...	...	...	39,692	1,091	44
(d)	123.0	Schistosomiasis vesical (S. hæmatobium)	...	...	...	—	—	—
(e)	123.1	Schistosomiasis intestinal (S. mansoni)	...	...	...	—	—	—
A 38	123.3	Other and unspecified schistosomiasis	...	...	...	—	—	—
(a)	125	Hydatid disease	...	...	...	—	—	—
A 39	127	Onchocerciasis	...	...	...	—	—	—
A 40		Loaisais	...	...	...	—	—	—
(a)		Filariasis (bancrofti)	...	...	...	2	1	—
(b)		Other filariasis	...	...	...	11	—	—
(c)	129	Ankylostomiasis	...	...	...	1,499	88	—
(d)	126	Tapeworm (infestation) and other cestode infestations	...	...	...	70	—	—
A 41	130.0	Ascariasis	...	...	...	9,440	136	—
A 42	130.3	Guinea worm (dracunculosis)	...	...	...	—	—	—
(a)	124, 128, } 130.1, 130.2 }	Other diseases due to helminths	...	...	...	3,883	32	—



# RETURN OF MORBIDITY AND MORTALITY FOR THE YEAR, 1956 — (cont.)

Intermediate List Numbers	Detailed List Numbers	C A U S E G R O U P S	Outpatient 1st Attendances	Inpatient Admitted	Died in Hospital
A 43 (a)	037	Lymphogranuloma venereum ...	—	—	—
(b)	038	Granuloma inguinale, venereal ...	—	—	—
(c)	039	Other and unspecified venereal diseases ...	4	—	—
(d)	049	Food poisoning infection and intoxication ...	62	18	—
(e)	071	Relapsing fever ...	—	—	—
(f)	072	Leptosprosis icterohæmorrhagica (Well's disease) ...	—	—	—
(g)	073	Yaws ...	3,727	73	—
(h)	087	Chicken-pox ...	373	43	—
(i)	090	Dengue ...	—	—	—
(j)	095	Trachoma ...	43	13	—
(k)	096.7	Sandfly fever ...	2	1	—
(l)	120	Leishmaniasis ...	—	—	—
(m)	121 (a)	Trypanosomiasis gambiensis ...	—	—	—
	(b)	Trypanosomiasis rhodesiensis ...	—	—	—
	(c)	Other and unspecified trypanosomiasis ...	—	—	—
(n)	131	Dermatophytosis (kurap, etc.) ...	5,681	62	—
(o)	135	Scabies ...	3,522	42	—
(p)	036, 054, 059, 063, 064, 070, 074, 086, 088, 089, 093, 096.1—096.6, 096.8, 096.9, 122, 132—134, 136—138	All other diseases ...	1,815	86	1
	140—148	Classified as infective and parasitic ...	—	—	—
A 44	150	Malignant neoplasm of buccal cavity and pharynx ...	1	8	4
A 45	151	Malignant neoplasm of stomach ...	—	—	—
A 46	152, 153	Malignant neoplasm of intestine, except rectum ...	—	12	4
A 47			1	4	1



A 48	154	Malignant neoplasm of rectum ...	...	3	1
A 49	161	Malignant neoplasm of larynx ...	...	—	—
A 50	162, 163	Malignant neoplasm of trachea, and of bronchus and lung not specified as secondary ...	...	3	2
A 51	170	Malignant neoplasm of breast ...	...	2	1
A 52	171	Malignant neoplasm of cervix uteri ...	...	8	—
A 53	172—174	Malignant neoplasm of other and unspecified parts of uterus ...	...	3	1
A 54	177	Malignant neoplasm of prostate ...	...	3	—
A 55	190, 191	Malignant neoplasm of skin ...	...	2	—
A 56	196, 197 155—160 164, 165 175, 176 178—181 192—195 198, 199	Malignant neoplasm of bone and connective tissue ...	...	11	2
A 58	204	Leukaemia and aleukaemia ...	...	1	—
A 59	200—203, 205	Lymphosarcoma and other neoplasms and haematopoietic system ...	...	2	—
A 60	210—239	Benign neoplasms and neoplasms of unspecified nature ...	...	34	—
A 61	250, 251	Nontoxic goitre ...	...	226	—
A 62	252	Thyrototoxicosis with or without goitre ...	...	12	2
A 63	260	Diabetes mellitus ...	...	58	1
A 64 (a)	280	Beri-beri ...	...	269	—
(b)	281	Pellagra ...	...	—	—
(c)	282	Scurvy ...	...	2	—
(d)	283—286	Other deficiency states ...	...	1,795	1
A 65 (a)	290	Pernicious and other hyperchromic anaemias ...	...	99	—
(b)	291	Iron deficiency anaemias (hypochromic) ...	...	2,131	1

# RETURN OF MORBIDITY AND MORTALITY FOR THE YEAR, 1956 — (cont.)

Intermediate List Numbers	Detailed List Numbers	CAUSE GROUPS	Outpatient 1st Attendances	Inpatient Admitted	Died in Hospital
A 65 (c)	292, 293	Other specified and unspecified anaemias ...	9,712	240	6
A 66 (a)	241	Asthma ...	1,596	151	2
A 66 (b)	240	All other allergic disorders ...	391	74	—
	242—245				
	253, 254				
	270—277				
	287—289				
	294—299				
	300—309	Endocrine, metabolic and blood diseases ...	40	12	2
A 67	310—324				
A 68	326	Psychoses ...	13	124	8
A 69	325	Psychoneuroses and disorders personality ...	20	13	—
A 70	300—334	Mental deficiency ...	8	42	1
A 71	340	Vascular lesions affecting central nervous system ...	1	7	3
A 72	345	Non-meningococcal meningitis ...	63	7	3
A 73	353	Multiple sclerosis ...	—	1	—
A 74	370—379	Epilepsy ...	45	15	—
A 75	385	Inflammatory diseases of eye ...	4,152	121	3
A 76	387	Cataract ...	66	80	—
A 77 (a)	390	Glaucoma ...	8	6	—
A 77 (b)	391—393	Otitis externa ...	1,021	12	—
A 77 (c)	394	Otitis media and mastoiditis ...	1,095	22	—
A 78 (a)	380—384	Other inflammatory disease of ear ...	346	5	—
	386, 388	All other diseases and conditions of eye ...	1,311	152	—
	389				
(b)	341, 344				
	350—352				
	354—357				
	360—369				
	395—398				
	400—402				
		All other diseases of the nervous system and sense organs ...	648	81	7
A 79		Rheumatic fever ...	6	6	—

A 80	410—416	Chronic rheumatic heart disease	...	—	4	—
A 81	420—422	Arteriosclerotic and degenerative heart disease	...	1	4	1
A 82	430—434	Other diseases of heart	...	108	90	18
A 83	440—443	Hypertension with heart disease	...	8	17	2
A 84	444—447	Hypertension without mention of heart	...	37	29	1
A 85	450—456	Diseases of arteries	...	1	5	3
A 86	460—468	Other diseases of circulatory system	...	399	99	9
A 87	470—475	Acute upper respiratory infections	...	6,887	172	3
A 88	480—483	Influenza	...	8,634	90	—
A 89	490	Lobar pneumonia	...	36	71	9
A 90	491	Bronchopneumonia	...	182	237	23
A 91	492, 493	Primary a typical, other and unspecified pneumonia	...	793	150	29
A 92	500	Acute bronchitis	...	5,299	670	5
A 93	501, 502	Bronchitis, chronic and unqualified	...	9,693	286	1
A 94	510	Hypertrophy of tonsils and adenoids	...	1,579	99	—
A 95	518, 521	Empyema and abscess of lung	...	3	4	—
A 96	519	Pleurisy	...	176	37	—
A 97 (a)	523	Pneumoconiosis	...	—	1	—
(b)	511—517 } 520—522 } 524—527 }	All other respiratory diseases	...	1,501	110	1
A 98 (a)	530	Dental caries	...	3,313	20	—
A 99 (b)	531—535	All other diseases of teeth and supporting structures	...	552	26	1
	540	Ulcer of stomach	...	28	22	5
A 100	541	Ulcer of duodenum	...	5	15	1
A 101	543	Gastritis and duodenitis	...	2,695	130	1
A 102	550—553	Appendicitis	...	40	69	3
A 103	570 } 560, 561 }	Intestinal obstruction and hernia	...	38	54	6
A 104 (a)	571.0	Gastro-enteritis and colitis between four weeks and two years	...	1,168	103	13



# RETURN OF MORBIDITY AND MORTALITY FOR THE YEAR, 1956 — (cont.)

Intermediate List Numbers	Detailed List Numbers	CAUSE GROUPS	Outpatient 1st Attendances	Inpatient Admitted	Died in Hospital
A 104 (b)	571.1	Gastro-enteritis and colitis, ages 2 years and over	2,510	106	5
A 105	572	Chronic enteritis and ulcerative colitis	55	12	—
A 106	581	Cirrhosis of liver	56	28	5
A 107	584, 585 536—539 542, 544 545 573—580 582, 583 586, 587	Cholelithiasis and cholecystitis	18	18	—
		Other diseases of digestive system	4,600	301	12
A 108	590	Acute nephritis	81	44	3
A 109	591—594	Chronic, other and unspecified nephritis	97	19	2
A 110	600	Infections of kidney	101	18	—
A 111	602, 604	Calculi of urinary system	2	12	—
A 112	610	Hyperplasia of prostate	—	2	—
A 113	620, 621	Diseases of breast	78	14	—
A 114 (a)	613	Hydrocele	10	7	—
A 114 (b)	634	Disorders of menstruation	329	65	—
A 114 (c)	601, 603 605—609 611, 612 614—617 622—633 635—637	All other diseases of the Genito-urinary system	442	284	5
A 115	640—641 681, 682 684	Sepsis of pregnancy, childbirth and the puerperium	24	7	—
A 116	642, 652 685, 686	Toxæmias of pregnancy and the puerperium	67	24	—
A 117	643, 664 670—672	Haemorrhage of pregnancy and childbirth	21	24	4
A 118	650	Abortion without mention of sepsis or toxæmia	93	160	—

A 119	651	Abortion with sepsis ...	...	13	40	—
A 120 (a)	645—649	Other complications of pregnancy, childbirth and the puerperium ...	...	...	...	...
	673—680		...	...	...	...
	683		...	112	202	14
	687—689					
(b)	660	Delivery without complications ...	...	415	1,249	—
A 121	690—698	Infections of skin and subcutaneous tissue ...	...	6,666	439	—
A 122	720—725	Arthritis and spondylitis ...	...	855	120	1
A 123	726, 727	Muscular rheumatism and rheumatism unspecified	...	6,379	112	—
A 124	730	Osteomyelitis and periostitis ...	...	42	23	—
A 125	737 } 745—749 }	Ankylosis and acquired musculo-skeletal deformities	...	1	9	—
A 126 (a)	715	Chronic ulcer of skin (including tropical ulcer) ...	...	11,811	192	—
(b)	700—714 }	All other diseases of skin ...	...	2,856	169	2
	716					
(c)	731—736 }	All other diseases of musculo-skeletal system ...	...	30	6	1
	738—744 }					
A 127	751	Spina bifida and meningocele ...	...	—	—	—
A 128	754	Congenital malformations of circulatory system ...	...	—	—	—
A 129	750, 752 } 753 } 755—759 }	All other congenital malformations ...	...	1	20	1
A 130	760, 761	Birth injuries ...	...	—	3	—
A 131	762	Post-natal asphyxia and atelectasis ...	...	1	4	4
A 132 (a)	764	Diarrhoea of new-born (under four weeks) ...	...	34	—	—
(b)	765	Ophthalmia neonatorum ...	...	—	—	—
(c)	763,					
	766—768	Other infections of new-born ...	...	2	9	3
A 133	770	Haemolytic disease of new-born ...	...	—	—	—

# RETURN OF MORBIDITY AND MORTALITY FOR THE YEAR, 1956 — (contt.)

Intermediate List Numbers	Detailed List Numbers	CAUSE GROUPS	Outpatient 1st Attendances	Inpatient Admitted	Died in Hospital
A 134	769, 771, 772	All other defined diseases of early infancy	38	16	2
A 135	773, 776	Ill-defined diseases peculiar to early infancy, and immaturity unqualified	62	17	13
A 136	794	Senility without mention of psychosis	136	41	4
A 137 (a)	788.8	Pyrexia of unknown origin	812	46	2
(b)	793	Observation, without need for further medical care	4,264	629	16
(c)	780—787				
	788.1				
	788.7				
	789.9				
	789—792				
	795	All other ill-defined causes of morbidity	8,206	546	8
AE 138	E810—E835	Motor vehicle accidents	33	28	2
AE 139	E800—E802	Other transport accidents	64	46	2
AE 140	E840—E866	Accidental poisoning	29	12	1
AE 141	E870—E895	Accidental falls	1,741	307	4
AE 142	E900—E904	Accident caused by machinery	157	23	—
AE 143	E912 E916	Accident caused by fire and explosion of combustible material	36	24	—
AE 144	E917, E918	Accident caused by hot substance corrosive liquid, steam and radiation	390	63	1
AE 145	E919	Accident caused by fire-arm	1	5	—
AE 146	E929	Accidental drowning and submersion	2	1	1
AE 147 (a)	E920	Foreign body entering eye and adnexa	89	7	—
(b)	E923	Foreign body entering other orifice	165	23	—
(c)	E927	Accidents caused by bites and stings of venomous animals and insects	649	53	—
(d)	E928	Other accidents caused by animals	115	24	1



AE 147 (e)	E910, E911	All other accidental causes	...	...	7,750	622	3
	E913—E915						
	E921—E922						
	E924—E926						
	E930—E965						
AE 148	E970—E979	Suicide and self-inflicted injury	...	...	1	3	1
AE 149	E980—E985	Homicide and injury purposely inflicted by other persons (not in war)	...	...	64	24	4
AE 150	E900—E999	Injury resulting from operations of war	...	...	—	—	—

“N” CODE. ALTERNATIVE CLASSIFICATION OF ACCIDENTS, POISONINGS, AND VIOLENCE  
(NATURE OF INJURY)

Intermediate List Numbers	Detailed List Numbers	CAUSE GROUPS			Outpatient 1st Attendances	Inpatient Admitted	Died in Hospital
AN 138	N800—N804	Fracture of skull	...	...	2	21	9
AN 139	N805—N809	Fracture of spine and trunk	...	...	6	39	—
AN 140	N810—N829	Fracture of limbs	...	...	79	173	—
AN 141	N830—N839	Dislocation without fracture	...	...	60	20	—
AN 142	N840—N848	Sprains and strains of joints and adjacent muscle	...	...	2,313	73	—
AN 143	N850—N856	Head injury (excluding fracture)	...	...	76	43	1
AN 144	N860—N869	Internal injury of chest, abdomen, and pelvis	...	...	19	38	7
AN 145	N870—N908	Laceration and open wounds	...	...	4,647	455	1
AN 146	N910—N929	Superficial injury, contusion and crushing with intact skin surface	...	...	2,877	212	—
AN 147	N930—N936	Effects of foreign body entering through orifice	...	...	225	29	—
AN 148	N940—N949	Burns	...	...	413	49	—
AN 149	N960—N979	Effects of poisons	...	...	141	27	2
AN 150	N950—N959	All other and unspecified effects of external causes	...	...	669	63	—
	N980—N999						











